

March 6, 1945.

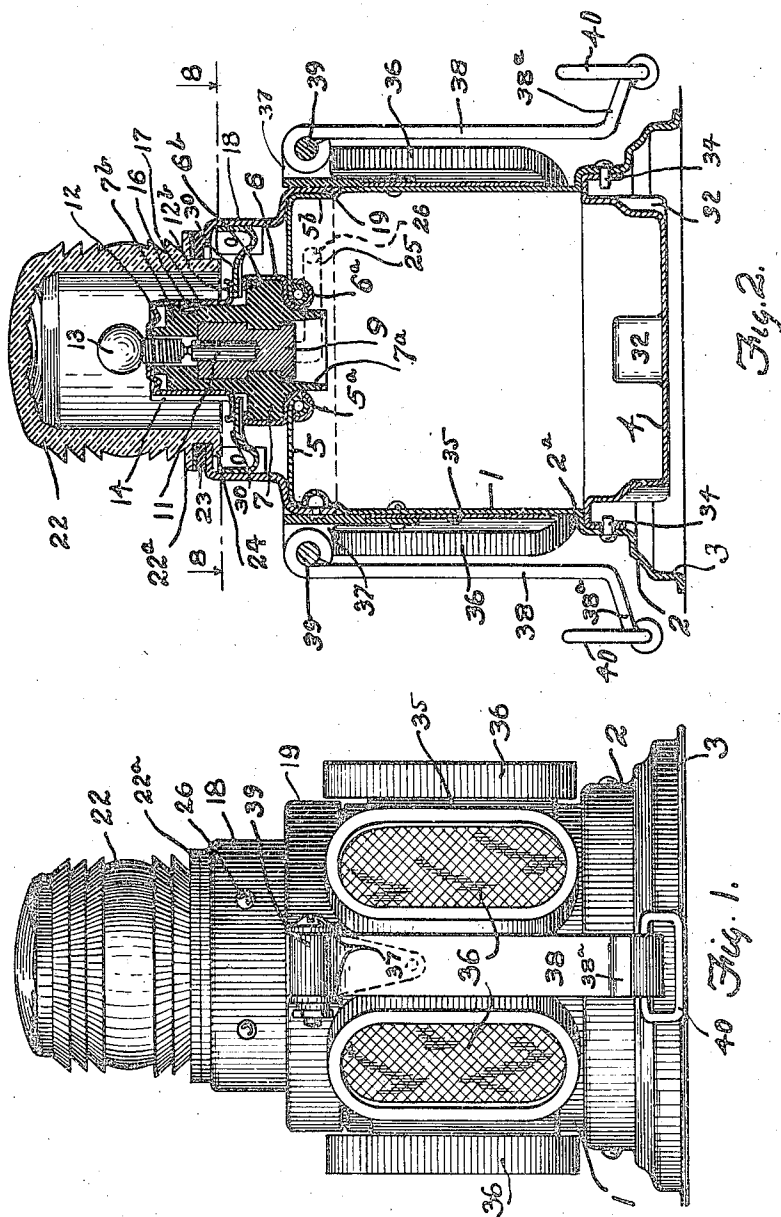
W. TRAUTNER

2,370,824

FLARE OR LANTERN

Filed June 29, 1943

2 Sheets-Sheet 1



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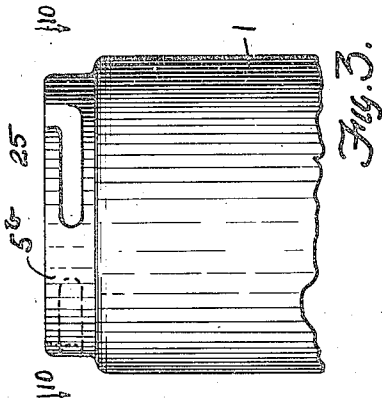
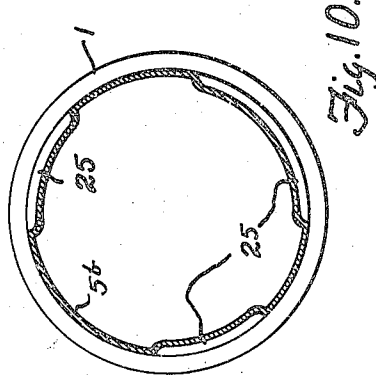
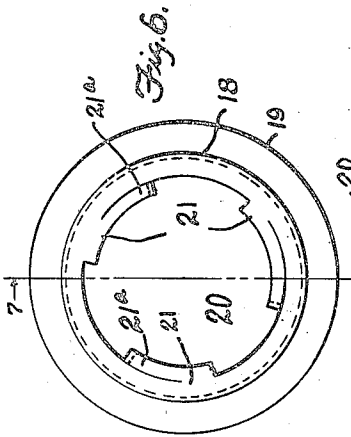
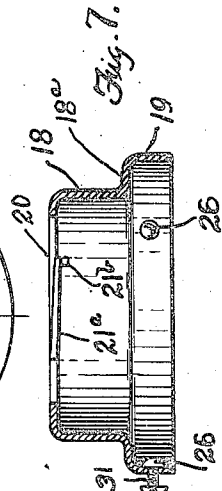
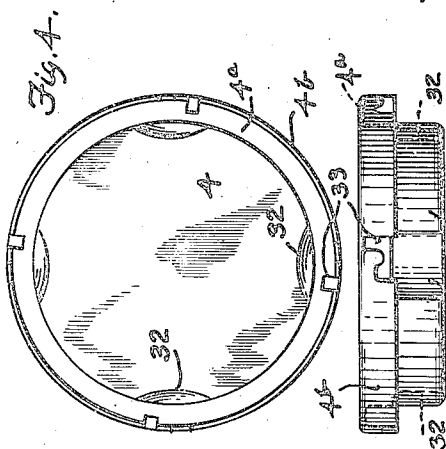
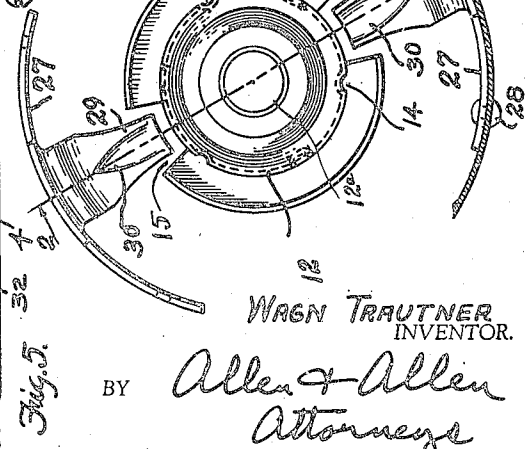
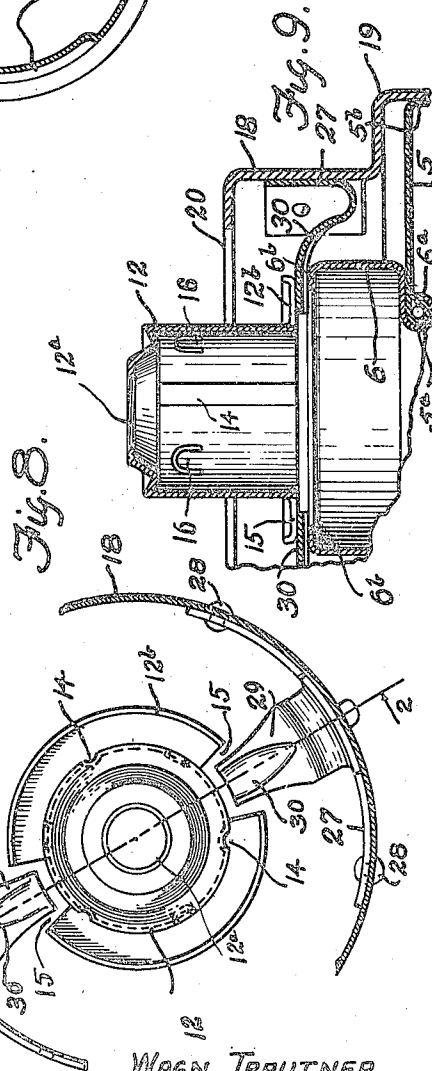
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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

2,370,824

FLARE OR LANTERN

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Application June 29, 1943, Serial No. 492,703

7 Claims. (Cl. 240—10.6)

My invention has to do with the construction of battery operated flares or lanterns. Such structures have hitherto been known in the art; and one of the primary purposes of my invention is the provision of a flare or lantern having improved structural and operational advantages as will hereinafter be made clear.

Another object of my invention is the provision of structural improvements in devices of the class to which reference has been made, which structural improvements not only simplify and cheapen the structure as such, but provide important advantages in strength, durability, watertightness and the like.

It is an object of my invention to provide a structure in which the number of operating parts is greatly reduced. These and other objects of my invention, which will be set forth hereinafter or will be apparent to one skilled in the art upon reading these specifications, I accomplish by that certain structure and arrangement of parts of which I shall now describe an exemplary embodiment. Reference is made to the drawings wherein:

Figure 1 is a side elevation of a flare formed in accordance with my invention.

Figure 2 is a vertical section thereof.

Figure 3 is an elevational view showing the upper portion of the body member.

Figures 4 and 5 are respectively plan and elevational views of the bottom closure member.

Figures 6 and 7 are respectively plan and sectional views of a lens ring.

Figure 8 is a partial sectional view taken along the line 8—8 of Figure 2.

Figure 9 is a partial vertical section, with certain elements omitted showing more clearly the functioning of a switch mechanism.

Figure 10 is a section taken along the line 10—10 of Figure 3.

The particular embodiment of my invention which I shall describe is an electric flare for use on roadway or other construction work or on trucks. It is designed to be operated by one of the self-contained, substantially rectangular battery assemblies, known on the market, and characterized by contacts on the upper end, one of which is located substantially centrally, while the other is an outlying contact. Since the battery assembly can be placed in the body in a plurality of orientations, it has hitherto been necessary in flares and lanterns to provide in the upper end of the body a disc of "Bakelite" or other insulating material upon which is mounted a central circular contact plate and an outlying

annular contact plate spaced from the first. These contact plates are connected by wires or other means to the switch device and to the lamp or lamps employed. I avoid this complexity of structure while providing greater safety and less liability to short circuits in a way which will hereinafter be set forth, and at the same time I attain a water- and weather-proof construction.

The body of my device is a drawn can 1 of a shape and size to receive the battery. At its lower end it is provided with a rim 2 to accept a bottom closure member, and an outlying and relatively broader base portion 3 upon which the device may stand. The rim 2 is larger than the diameter of the body portion of the can so that there is provided a shoulder 2a assisting in the positioning of the bottom closure which, in Figure 2, is indicated generally at 4.

The top of the can, indicated at 5, is provided with a central perforation about the edges of which the metal is beaded as at 5a.

A thimble 6 has a reduced portion of a size to enter the perforation at the top 5 of the can; and the metal of the entering portion is beaded as at 6a over the bead 5a in a watertight construction. An insulating fixture 7, formed of "Bakelite" or other suitable plastic, has a shouldered part as shown fitting in the thimble 6, where it is held by beading or upsetting the metal of the upper end of the thimble, as at 6b, over the shoulder of the "Bakelite" fitting. Thus, the "Bakelite" fitting is fastened in a watertight manner to the thimble, and closes the upper end of the can 1.

The "Bakelite" fixture has a central insert 9 of brass or other metal and which is preferably fixed in the "Bakelite" fixture during the molding thereof. The lower face of the member 9 is exposed, as shown, and about this face I provide a depending skirt 7a of the "Bakelite" or other insulating material. The upper end of the can 1 is sealed as described; but it also provides contact means, for the lower face of the metal 9 furnishes the central contact, while the can top 5 furnishes the outlying or annular contact. The depending skirt 7a prevents the occurrence of a short circuit if the central contact of the battery, not shown, is displaced or out of alignment.

The upper end of the "Bakelite" fitting 7 is elongated into a barrel-like body 7b. The metal member 9 is furnished with a central, spring-pressed contact member indicated at 11. A metal ferrule 12 is placed over the barrel-like portion 7b of the "Bakelite" fitting. As shown in

Figures 8 and 9, this ferrule has a cylindrical body, and a top which is perforated as at 12a. The edges of the metal about this perforation are configured to engage with the threads on the base of an incandescent bulb 13. The barrel-shaped body of the ferrule 12 is provided with one or more longitudinal ribs 14, and corresponding longitudinal depressions are formed by molding in the "Bakelite" fitting 7 so that when the ferrule is in place thereon, it cannot rotate with respect to the fitting.

The ferrule 12 has a lower horizontally extending skirt 12b, the outer edge of which may be turned up as shown. This skirt is not annularly continuous but is cut away at one or more places as indicated at 15 in Figure 8 for a purpose hereinafter to be described. The length of the body of the ferrule 12 is such that the skirt 12b will lie above and out of contact with the turned-over edge 6b of the thimble 6. The ferrule 12 is suitably held to the barrel part 7b of the "Bakelite" fitting 7. This may be accomplished by providing the ferrule 12 with inverted U-shaped cuts 16 which provide tongues which can be forced into recesses molded in the "Bakelite" fitting as indicated in Figure 2 at 17. When the bulb 13 is in place as shown, the threaded part of its screw base will be in electrical contact with the ferrule 12, while its central contact point will be in electrical contact with the metal part 9.

A lens ring is formed from sheet metal as shown in Figures 6 and 7. It has a substantially cylindrical body 18 of shallow depth and an outlying annular flange portion 19 which is demarked by a shoulder 18a. The top portion of the lens ring is perforated as at 20, and the perforation is characterized by certain inward protuberances 21, slit inwardly from one side to form resilient tongues 21a, the outer ends of which may be turned downwardly as at 21b. It will be clear from Figure 1 that this lens ring will accept a Fresnel lens or similar translucent part 22. This lens is preferably provided with a flange 22a, against which a sealing ring 23 of waterproof material may be placed, and which will form a cushioned connection with the top of the lens ring when downward, discontinuous projections 24 on the lens engage beneath the resilient arms 21a.

The outlying annular flange 19 of the lens ring is of such size as will enable it to slip over the slightly reduced upper end 5b of the can 1, best illustrated in Figures 3 and 10. Angle slots, indicated at 25, are pressed into the portion 5b. The outlying flange 19 of the lens ring is provided with inwardly extending rivets or the like 26; and it will be clear how these rivet heads enter the angle slots 25, and upon slight rotation of the lens ring, prevent the removal thereof from the metal can or body 1.

In order to make electrical connection between the ferrule 12 and the thimble 6, I attach contact blades to the inside of the body 18 of the lens ring. These blades have curved base portions 27 which may be riveted as at 28 to the member 18. They also have inwardly extending tongues or blade portions 29, preferably curved as most clearly shown in Figures 2 and 9 to give them resiliency. The ends of these blades may be dished, as indicated at 30, in order to insure contact. When the lens ring 18 is in place in the can body, the blades 29 contact the over-turned edge 6b of the thimble 6. When the blades lie in the spaces 15 cut out of the skirt, they do not, of course, make contact with the ferrule; but they will make contact with it if the lens ring

is rotated a slight amount. The length of the horizontal portion of the angle grooves 25 is such as to permit this rotation; but in order to prevent such rotation as would bring the rivet heads 26 below the vertical portions of the angle grooves 25 (thus permitting the removal of the lens ring), I provide a screw 31 adjacent one of the rivets and which, when driven in, will limit the rotation of the lens ring by engaging within one of the angle grooves 25. But it will be clear from the description above that my lantern or flare may be turned on or off by slightly rotating the lens ring 18 with respect to the can or body 1.

The can or body 1 is itself closed on top in a waterproof manner. Consequently, should the flare be set on a wet roadway or the like, the air within the can will prevent any substantial rise of water within the can body. It is not necessary to provide a watertight bottom closure for the can. A cup-shaped closure is indicated at 4 (Figures 4 and 5). At the top of this closure the metal is turned out annularly to form a horizontal flange 4a, and then turned downwardly as at 4b. This gives a portion which will lie against the shoulder 2a of the can body. The body of the closure may be formed with inwardly depressed ribs 32 which facilitate grasping and rotation of the body. The depending annular flange 4b is preferably formed with J-slots, as indicated at 33, and these may be engaged by inwardly extending screws or rivets 34 in the flange part 2 of the body 1.

If the structure is to be used as a hand lantern, it may be provided with a handle in any suitable way. If it is to be used as a flare for roadway or other construction work, I prefer to provide it with attachment devices hereinafter to be described, as well as with reflectors such as will make it visible in the lights of approaching traffic even if the bulb or battery of the structure should fail during a period of service. To the latter end, I provide a thin metal band 35, to which I attach a plurality of reflective devices 36 of types known to commerce. These usually comprise configured glass members, colored or clear as desired, the rear surface of which is silvered and formed into minute reflective lenses. The glass members are held, usually with suitable backing, in cup-shaped ferrule members which are directly attached to the band 35. Eared brackets 37 are attached as by riveting to the strap 35 or they may be riveted through the strap to the can body 1. The ends of the strap are attached or clamped together in any suitable way and may also be riveted if desired to the can body 1. The rivets may be tightened in such manner as to leave no passage for moisture through the can body.

Arms 38 are pivoted by means of pintles 39 to the eared brackets 37. The arms, when in the depending position, are outwardly bent as at 38a to avoid the base 3, and rings or similar members 40 may be pivotally attached to the outer ends of the arms, the metal of the arm being curled about one portion of the ring. In Figure 2 the arms are shown in a depending position and it will be clear that the rings 40 may be employed in connection with a band or strap to attach my flare to some object upon which it rests. For example, where the flare is used upon beams or lumber projecting from the rear of a truck or other vehicle, the flare may be placed upon the beam ends and strapped to one or more of the beams by a strap or rope passing through the rings 40. But the arms may also be brought to an upwardly extending position, not illustrated,

wherein the rings 40 approach each other above the lens 22. A short strap or string connecting the rings may then form a handle for carrying the device, or a strap or rope may be employed to hang the device from a support above it, as will be clear.

Modifications may be made in my structure without departing from the spirit of it. Having thus described my structure in an exemplary embodiment, what I claim as new and desire to secure by Letters Patent is:

1. In a device of the character described, an inverted can-shaped body having an opening in its upper end, a thimble directly attached to said can-shaped body at said opening and in sealing relation therewith, an insulating member having a central electrically conducting portion with a downwardly exposed face, said insulating member being fixed in said thimble in sealing relation therewith, said body being capable of receiving a battery with a central and an outlying contact member, the central contact member making electrical contact with the downwardly exposed conducting portion of said insulating member and the outlying contact member making electrical contact with the top of said body, said insulating member having an upwardly extending portion provided with a metal ferrule, said ferrule being perforated and configured to accept the base of an incandescent bulb extending down into a hollow in said insulating member and making contact with the central electrical conducting portion thereof, said metal ferrule being supported by said insulating member out of contact with said thimble, and means acting as a switch for making and breaking electrical contact between said ferrule and said thimble, said last mentioned means comprising a divided skirt on said ferrule and a blade mounted for rotation to contact said thimble and in one position also to contact a portion of said skirt, a lens ring on which said blade is mounted, said lens ring being rotatably mounted on said can-shaped body, and a lens mounted in said lens ring and covering said incandescent bulb.

2. The structure claimed in claim 1 wherein the bottom of said can-shaped body has a removable closure and wherein said can-shaped body is surrounded by a band having reflectors attached thereto.

3. The structure claimed in claim 1 wherein the bottom of said can-shaped body has a removable closure and wherein said can-shaped body is surrounded by a band having reflectors attached thereto, brackets attached to said band and attachment arms pivoted to said brackets, said attachment arms having means for the acceptance of flexible means whereby the device may be affixed to a support.

4. The structure claimed in claim 1 wherein arms are pivoted on said device at one end and which are provided with means at the ends opposite the pivots to accept a strap or the like, said arms being adapted to be swung from a lower position to an upper position whereby the device may be attached to a support either above or below it.

5. In a device of the character described, an inverted can-shaped body having a perforated top, a thimble attached to said body in a watertight fashion about the edges of said perforation, an insulating fitting clamped in a watertight fashion in said thimble, said insulating fitting having a central conductor with a downwardly exposed face, a ferrule on said insulating fitting

adapted to hold an incandescent bulb by its base with the central contact of said bulb making contact with the central conductor of said insulating fitting, said can-shaped body having a reduced upper end, a lens ring mounted on said reduced portion, connecting means between said lens ring and body whereby said lens ring may be rotatively adjusted in relation to said body, at least one blade within said lens ring adapted upon movement of the lens ring to make and break contact between said ferrule and said thimble, said lens ring having a perforation to accept a lens, a cup-shaped Fresnel lens mounted in said lens ring, a removable closure for the lower end of said can-shaped body, said can-shaped body being effectively watertight except as to its open end whereby water is prevented from rising within it by air pressure, said can-shaped body at its open lower end being formed with an outwardly flared base.

6. In a device of the character described, an inverted can-shaped body having a perforated top, a thimble attached to said body in a watertight fashion about the edges of said perforation, an insulating fitting clamped in a watertight fashion in said thimble, said insulating fitting having a central conductor with a downwardly exposed face, a ferrule on said insulating fitting adapted to hold an incandescent bulb by its base with the central contact of said bulb making contact with the central conductor of said insulating fitting, said can-shaped body having a reduced upper end, a lens ring mounted on said reduced portion, connecting means between said lens ring and body whereby said lens ring may be rotatively adjusted in relation to said body, at least one blade within said lens ring adapted upon movement of the lens ring to make and break contact between said ferrule and said thimble, said lens ring having a perforation to accept a lens, a cup-shaped Fresnel lens mounted in said lens ring, a removable closure for the lower end of said can-shaped body, said can-shaped body being effectively watertight except as to its open end whereby water is prevented from rising within it by air pressure, said can-shaped body at its open lower end being formed with an outwardly flared base, said insulating fitting having within said can-shaped body a downwardly depending insulating skirt surrounding the exposed face of the central conductor.

7. In a device of the character described, an inverted can-shaped body having a perforated top, a thimble attached to said body in a watertight fashion about the edges of said perforation, an insulating fitting clamped in a watertight fashion in said thimble, said insulating fitting having a central conductor with a downwardly exposed face, a ferrule on said insulating fitting adapted to hold an incandescent bulb by its base with the central contact of said bulb making contact with the central conductor of said insulating fitting, said can-shaped body having a reduced upper end, a lens ring mounted on said reduced portion, connecting means between said lens ring and body whereby said lens ring may be rotatively adjusted in relation to said body, said lens ring having a perforation to accept a lens, a cup-shaped Fresnel lens mounted in said lens ring, a removable closure for the lower end of said can-shaped body, said can-shaped body being effectively watertight except as to its open end whereby water is prevented from rising within it by air pressure, said can-shaped body at its open lower end being formed with an outwardly

flared base, said insulating fitting having within said can-shaped body a downwardly depending insulating skirt surrounding the exposed face of the central conductor, said thimble having an intumed flange at its upper end, said ferrule having an outturned flange at its lower end, said flanges being spaced, the flange on said ferrule

having at least one interruption, and means for effecting electrical contact between the ferrule and thimble comprising a blade attached to said lens ring and adapted upon movement of the lens ring to ride in the space between said flanges.

WAGN TRAUTNER.